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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,115	08/16/2006	Elias Jonsson	P18171-US2	2864
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ERICSSON INC. 6300 LEGACY DRIVE M/S EVR 1-C-11 PLANO, TX 75024				
EXAMINER				
GUARINO, RAHEL				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/595,115

Applicant(s)

JONSSON ET AL.

Examiner

RAHEL GUARINO

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-14 and 18-24 is/are rejected.
- 7) ☒ Claim(s) 4-6 and 15-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SI/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4,7-14,18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Popovic et al. US 6,370,397 in view of Li et al. US 2003/0083014

Re claim 1, Popovic discloses A method of detecting multipath components in time-varying fading radio channels in a digital wireless communications system in which individual multipath components of a signal transmitted through a channel are received with individual delays ($\tau_{sub,a}$, $\tau_{sub,b}$, $\tau_{sub,c}$) within a range of possible delay values, and in which signals transmitted through a given channel comprise an identification code identifying that channel, the method comprising the steps of (fig.6):

Calculating repetitively for each of a number of known channels (pilot) a delay profile indicating a magnitude (Y) for each of a number of individual delay values in a search window constituting a subset of said range of possible delay

values and being positioned based on at least one previously calculated delay profile for the corresponding channel (col. 11 lines 1-17); estimating from said delay profiles the delays of multipath components for each known channel (col. 2 lines 55-61); and searching at regular time intervals for new multipath components that are not already estimated from one of said delay profiles (equation 3 col. 10 lines 51-60); comparing, when a new multipath component is found, the identification code of the new multipath component to the identification codes of said known channels (col. 3 lines 47-52); and does not teach calculating, if the identification code of the new multipath component is identical to the identification code of one of the known channels, a delay profile and a corresponding signal strength indicator for a transposed window obtained by transposing the search window of that known channel to include said new multipath component.

However, Li discloses calculating, if the identification code of the new multipath component (spreading code) is identical to the identification code of one of the known channels, a delay profile (T_1-T_n) and a corresponding signal strength (E_1-E_n) indicator for a transposed window (new window) obtained by transposing the search window of that known channel to include said new multipath component calculating from said delay profiles a signal strength indicator for each known channel (para#38).

Therefore, taking the combined teaching of Li and Popovic as a whole would have been rendered obvious to one skilled in the art to modify Popovic to calculating, if the identification code of the new multipath component is identical

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to the identification code of one of the known channels, a delay profile and a corresponding signal strength indicator for a transposed window obtained by transposing the search window of that known channel to include said new multipath component for the benefit of minimizing the function that will result in a cell site that provides the best quality of service in a multipath propagation environment (para#26; Li).

Re claim 2, the modified invention as claimed in claim 1, further comprising further comprising the step of replacing the signal strength indicator calculated for that known channel by the signal strength indicator (E_1-E_n) calculated for the transposed window.

Re claim 3, the modified invention as claimed in claim 2 further comprising the step of replacing the search window for that known channel by the transposed window (new window(para#38)).

Re claim 7, the modified invention as claimed in claim 1, further comprising the steps of: calculating a signal strength indicator for the transposed window a number of times; calculating a filtered signal strength indicator from said number of calculated signal strength indicators; and using said filtered signal strength indicator as the signal strength indicator calculated for the transposed window (equation 3 col. 10 lines 51-60).

Re claim 8, the modified invention as claimed in claim 1, further comprising the steps of: calculating a center of gravity for said previously calculated delay profile; and positioning the search window (W.sub.0) around said calculated center of gravity (col. 11 lines 54-55).

Re claim 9, the modified invention as claimed in claim 1, wherein the multipath components calculated for said transposed window are considered as already estimated in said step of searching at regular time intervals for new multipath components that are not already estimated from one of said delay profiles (equation 3 col. 10 lines 51-60);.

Re claim 10, the modified invention as claimed in claim 1, wherein the digital wireless communications system is a Wideband Code Division Multiple Access system (col. 4 lines 48-50).

Re claim 11, the modified invention as claimed in claim 10, wherein the identification code is a scrambling code for a Common Pilot Channel in said Wideband Code Division Multiple Access system (col. 4 lines 48-50, pilot channel).

Re claim 12, Popovic discloses a receiver of detecting multipath components in time-varying fading radio channels in a digital wireless communications system in which individual multipath components of a signal transmitted through a channel are received with individual delays ($\tau_{sub.a}$, $\tau_{sub.b}$, $\tau_{sub.c}$) within a range of possible delay values, and in which signals transmitted through a given channel comprise an identification code identifying that channel, the method comprising the steps of (fig.6):

Means for calculating repetitively for each of a number of known channels (pilot) a delay profile indicating a magnitude (Y) for each of a number of individual delay values in a search window constituting a subset of said range of

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possible delay values and being positioned based on at least one previously calculated delay profile for the corresponding channel (col. 11 lines 1-17); Means for estimating from said delay profiles the delays of multipath components for each known channel (col. 2 lines 55-61); and means for searching at regular time intervals for new multipath components that are not already estimated from one of said delay profiles (equation 3 col. 10 lines 51-60); means for comparing, when a new multipath component is found, the identification code of the new multipath component to the identification codes of said known channels (col. 3 lines 47-52); and does not teach means for calculating, if the identification code of the new multipath component is identical to the identification code of one of the known channels, a delay profile and a corresponding signal strength indicator for a transposed window obtained by transposing the search window of that known channel to include said new multipath component.

However, Li discloses means for calculating, if the identification code of the new multipath component (spreading code) is identical to the identification code of one of the known channels, a delay profile (T_1-T_n) and a corresponding signal strength (E_1-E_n) indicator for a transposed window (new window) obtained by transposing the search window of that known channel to include said new multipath component calculating from said delay profiles a signal strength indicator for each known channel (para#38).

Therefore, taking the combined teaching of Li and Popovic as a whole calculating, if the identification code of the new multipath component is identical to the identification code of one of the known channels, a delay profile and a

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corresponding signal strength indicator for a transposed window obtained by transposing the search window of that known channel to include said new multipath component for the benefit of minimizing the function that will result in a cell site that provides the best quality of service in a multipath propagation environment (para#26; Li).

Re claim 13, the modified invention as claimed in claim 12, further comprising further comprising the step of means for replacing the signal strength indicator calculated for that known channel by the signal strength indicator calculated for the transposed window ($E_1 - E_n$).

Re claim 14, the modified invention as claimed in claim 13 further comprising the step of means for replacing the search window for that known channel by the transposed window (new window(para#38)).

Re claim 18, the modified invention as claimed in claim 12, further comprising the steps of: means for calculating a signal strength indicator for the transposed window a number of times; means for calculating a filtered signal strength indicator from said number of calculated signal strength indicators; and using said filtered signal strength indicator as the signal strength indicator calculated for the transposed window (equation 3 col. 10 lines 51-60).

Re claim 19, the modified invention as claimed in claim 18, further comprising the steps of: means for calculating a center of gravity for said previously calculated delay profile; and positioning the search window (W.sub.0) around said calculated center of gravity (col. 11 lines 54-55).

Re claim 20, the modified invention as claimed in claim 19, wherein further

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comprising means for treating the multipath components calculated for said transposed window are considered as already estimated in said step of searching at regular time intervals for new multipath components that are not already estimated from one of said delay profiles (equation 3 col. 10 lines 51-60);.

Re claim 21, the modified invention as claimed in claim 20, wherein the digital wireless communications system is a Wideband Code Division Multiple Access system (col. 4 lines 48-50).

Re claim 22, the modified invention as claimed in claim 21, wherein the identification code is a scrambling code for a Common Pilot Channel in said Wideband Code Division Multiple Access system (col. 4 lines 48-50, pilot channel).

3. Claims 23,24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Popovic et al. US 6,370,397 in view of Li et al. US 2003/0083014 in further view of Saito et al. US 200/10014116

Re claim 23, the modified invention as claimed in 1 does not teach wherein said steps are implemented using a computer program comprising program code means adapted to be run on a computer.

however, Saito discloses steps are implemented using a computer program comprising program code means adapted to be run on a computer (para#56).

Therefore, taking the combined teaching of Saito, Li and Popovic as a whole would have been rendered obvious to one skilled in the art to modify Li and Popovic to implement using a computer program comprising program code means adapted to be run on a computer for the benefit of reduces consumption power which a path search is carried out and a receiver using the method (para#13; Saito).

Re claim 24, the modified invention as claimed in 23 does not teach wherein the computer program is stored on a computer readable medium adapted to be read and processed by a computer. however, Saito discloses steps are implemented using a computer program comprising program code means adapted to be run on a computer (para#56).

Therefore, taking the combined teaching of Saito, Li and Popovic as a whole would have been rendered obvious to one skilled in the art to modify Li and Popovic to implement using a computer program comprising program code means adapted to be run on a computer for the benefit of reduces consumption power which a path search is carried out and a receiver using the method (para#13; Saito).

Allowable Subject Matter

4. Claims 4-6, 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAHEL GUARINO whose telephone number is (571)270-1198. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Liu Shuwang can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rahel Guarino/
Examiner, Art Unit 2611
/Shuwang Liu/
Supervisory Patent Examiner, Art Unit 2611

